Cyclone raw motor with external controller, 24v/30A (650w kit)

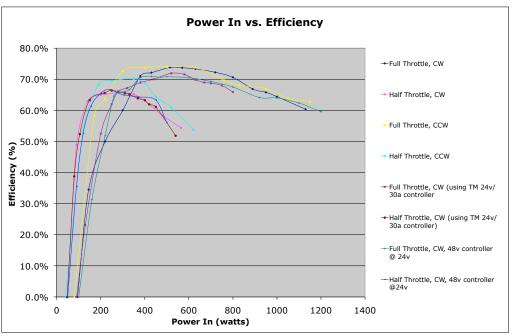
CW rotation Full Throttle Power (Drain Brain)		
95	Power (PowerTap) 0	Efficiency 0.0%
145	50 110	34.5% 50.0%
300	180	60.0%
380	270	71.1% 72.1%
430 515	310 380	
570	420	73.7%
630	462	73.7% 73.3% 72.2%
720 800	520 565	72.2% 70.6%
890	595 625	66.9%
950	625	65.8%
1000 1130	644 682	64.4% 60.4%
	082	00.470
CW rotation Half Throttle Power (Drain Brain)	Power (PowerTap)	Efficience
48 90	0 44	0.0% 48.9%
140	88	
200	130	65.0%
230 280	150 184	65.2% 65.7%
350	228	65.1% 61.9%
420 480	260	61.9%
480 565	307	58.3% 54.3%
CCW rotation		
Full Throttle	Power (PowerTap)	Efficiency
80 170	Power (PowerTap) 0 99	0.0% 58.2%
220	140	63.6%
300	218	
400 500	295 370	73.8% 74.0%
630	465	73.8%
760	530	73.8% 69.7% 68.1%
830 950	565 636	68.1% 66.9%
1050	670	63.8%
1150	723	62.9%
CCW rotation Half Throttle Power (Drain Brain)		
	Power (PowerTap) 0	Efficiency 0.0%
120	0 64	53.3%
190 250	130 174	68.4% 69.6%
250 350	246	70.3%
350 400	275	70.3% 68.8%
450 520	290 317	64.4% 61.0%
620	334	53.9%
CW rotation Full Throttle Power (Drain Brain) 91	Power (PowerTap) 0	Efficiency 0.0%
	30	23.1%
200	30 105	23.1% 52.5%
200 250	30 105 155	23.1% 52.5% 62.0%
200 250 280 320	30 105 155 185 215	23.1% 52.5% 62.0%
200 250 280 320 380	30 105 155 185 215 262	23.1% 52.5% 62.0% 66.1% 67.2% 68.9%
200 250 280 320 380 440 520	30 105 155 185 215 262 308 374	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0%
200 250 280 320 380 440 520 580	30 105 155 185 215 262 308 374 415	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0%
200 250 280 320 380 440 520 580 630	30 105 155 185 215 262 308 374 415 440	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 71.6% 69.8%
200 250 280 320 380 440 520 580 630 670	30 105 155 185 215 262 308 374 415 440 462	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 69.8% 69.0% 68.7%
200 250 280 320 380 440 520 580 630	30 105 155 185 215 262 308 374 415 440	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.6% 69.8%
200 250 280 320 380 440 520 580 630 670 700 750 800	30 105 155 185 215 262 308 374 415 440 462	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 69.8% 69.0% 68.7%
2000 250 288 320 330 380 440 520 530 630 670 700 750 800 CW rotation Half Throttle Power (Drain Brain)	30 105 105 185 215 262 308 374 415 440 462 481 510 527	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 71.6% 69.8% 69.0% 68.7% 68.0%
200 280 280 320 380 440 520 580 630 670 700 700 CW rotation Half Throttle Power (Drain Brain) 48	30 105 155 185 215 262 308 374 415 440 462 481 510 527	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 71.6% 69.8% 69.0% 68.7% 68.0%
2000 280 280 380 440 520 600 750 700 750 800 CW rotation Half Throttle Power (Drain Brain) 880	30 105 155 185 215 262 308 374 415 440 462 481 510 527	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 71.9% 71.69, 69.8% 69.0% 68.7% 68.0% 65.9%
2000 250 280 330 340 440 4520 580 6530 670 770 780 800 CW rotation Half Throttle Power (Drain Brain) 48 80 81 81 81 81 81	30 105 155 185 213 223 302 308 374 415 440 462 481 510 527	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 71.9% 71.6% 69.8% 69.0% 65.9% 65.9% 65.9%
200 250 250 250 250 250 250 250 250 250	30 105 155 125 215 262 308 374 410 460 462 481 510 527 Power (PowerTap) 0 31 55 55 143	23.1% 52.5% 62.0% 65.1% 67.2% 68.9% 71.9% 71.6% 69.8% 69.0% 65.5% Efficiency 0.0% 38.8% 63.3% 63.3%
200 205 250 280 380 44 42 520 580 630 670 770 800 CW retation Half Throttle Power (Drain Brain) 80 10 10 20 20 20 20 20 20 20 20 20 20 20 20 20	30 105 155 185 2112 202 202 308 374 415 440 462 481 510 0 31 527	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 71.9% 71.6% 69.8% 65.9% 68.7% 68.0% 65.5% 65.5% 65.6% 65.6% 65.6%
200 250 250 250 250 350 350 350 360 440 520 677 677 677 677 677 677 677 677 677 67	30 105 1151 1151 1252 262 308 374 416 462 481 510 527 Power (Power Tap) 0 11 166 167 168 169 169 169 169 169 169 169 169 169 169	23.1% 52.5% 62.0% 65.1% 67.2% 68.9% 70.0% 71.5% 69.8% 65.7% 68.0% 65.5% 55.5% 65.5% 65.5%
200 200 200 200 200 300 300 300 300 404 500 600 600 600 600 600 600 600 600 600	30 105 1151 1152 262 308 371 440 462 481 5117 527 Power (PowerTap) 31 31 35 35 35 31 31 36 203 213	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 69.0% 69.0% 65.9% 68.7% 68.3% 63.3% 65.5% 65.5% 65.5%
200 250 250 250 350 350 350 350 350 350 350 350 350 3	300 105 105 105 105 105 105 105 105 105 1	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.6% 68.9% 68.9% 68.7% 68.7% 68.7% 68.5% 65.5% 65.5% 65.6% 65.4% 65.3%
200 200 200 200 200 200 200 300 300 300	300 1051 1052 1053 1055 1055 1055 1056 1056 1056 1056 1056	23.1% 52.5% 62.0% 62.1% 67.2% 68.9% 70.0% 71.6% 69.8% 69.0% 63.5% 68.7% 68.0% 65.5% 68.7% 68.0% 65.5% 68.7% 68.0% 65.9% 68.7% 68.0% 65.9% 68.7% 68.0% 65.9% 68.7% 68.0% 65.9% 68.7% 68.0% 65.9% 68.7% 68.0% 65.9% 68.7% 68.0% 68.7% 68.0% 68.7% 68.0% 68.7% 68.0% 68.7% 68.0% 68.7% 68.0% 68.7% 68.0%
200 253 268 268 268 3188 484 540 540 567 760 677 760 880 CW rotation Half Throttle Power (Brain Brain) 150 151 150 153 153 154 155 155 155 155 155 155 155 155 155	300 105 1151 1251 1252 2622 3088 3774 444 4462 4861 5100 0 0 311 527 Power (PowerTap) 166 203 2115 2233 2233 2233 2230	23.1% 52.5% 62.0% 66.1% 67.2% 68.9% 70.0% 71.9% 68.0% 68.0% 65.5% 68.5% 65.5% 65.5% 65.5% 65.6% 65.5% 65.6% 65.5% 65.6% 65.5% 65.6%
200 255 258 258 258 338 348 440 540 540 540 677 700 677 700 677 700 677 700 677 700 677 700 677 700 677 700 700	300 1051 1052 1053 1055 1055 1055 1056 1056 1056 1056 1056	23.1 % 52.5% 62.0% 62.10% 65.17% 67.2% 68.9% 77.0.0% 77.0.0% 68.7% 68.0% 65.5% 65.5% 65.5% 65.5% 65.13% 65.5% 65.5% 65.5% 65.5% 65.5%
200 255 258 258 258 338 348 440 540 540 540 677 700 677 700 677 700 677 700 677 700 677 700 677 700 677 700 700	300 1051 1052 1053 1055 1055 1055 1056 1057 1057 1057 1057 1057 1057 1057 1057	23.1% 52.5% 62.0% 66.1% 67.2% 67.2% 67.2% 68.0% 69.0%
200 200 200 200 200 200 200 200 200 200	300 105 105 105 105 105 105 105 105 105 1	23.1% 52.5% 62.0% 66.17% 66.19% 71.6% 69.8% 69.8% 69.8% 69.8% 69.8% 69.8% 65.9% 65.5% 65.5% 65.5% 65.6% 65.5% 65.6% 65.6% 65.6% 65.6% 65.6% 65.7% 65.6% 65.7% 65.7% 65.7%
200 203 203 203 203 303 304 404 504 603 603 603 603 603 603 603 603 603 603	300 105 105 105 105 105 105 105 105 105 1	23.1 % 52.5 % 62.0 % 62.0 % 62.0 % 62.0 % 63.0 % 63.9 % 71.9 % 71.9 % 72.0 % 63.0 % 65.9 % 65.9 % 65.9 % 65.9 % 65.1 % 65.2 % 65.2 % 65.2 % 65.3 % 65.3 % 61.1 % 61
200 200 200 200 200 200 200 200 200 200	300 1053 1153 1253 1253 1254 1254 1254 1254 1254 1254 1254 1254	23.1% 52.5% 62.0% 62.0% 63.0% 63.9% 70.0% 63.9% 63.9% 63.0% 63.7% 63.0% 63.7% 63.1%
200 200 200 200 200 300 300 300 400 400 400 600 600 600 600 600 600 6	300 1051 1052 1053 1055 1055 1055 1056 1056 1056 1056 1056	23.1 % 52.5 % 62.0 % 62.0 % 62.0 % 62.0 % 63.0 % 63.0 % 63.0 % 63.0 % 65.0 %
200 200 200 200 200 200 200 200 200 200	300 1053 1855 2115 2058 3784 4110 4642 4811 5127 Power (PowerTap) 51 166 2016 2016 2017 2010 2010 2010 2010 2010 2010 2010	23.1% 32.5%
200 200 200 200 200 300 300 300 400 400 400 600 600 600 600 600 600 6	300 1051 1052 1053 1055 1055 1055 1056 1056 1056 1056 1056	23.1% 32.5%
200 200 200 200 200 200 200 300 300 404 300 500 600 600 600 600 600 600 600 600 6	300 1051 1052 1055 1055 1055 1055 1056 1057 1057 1057 1057 1057 1057 1057 1057	2.3.14/2 (2.2.2) 2.2.5/2 (2.2.
200 203 203 203 203 303 304 404 204 205 207 207 207 207 207 207 207 207 207 207	300 1051 1052 1053 1055 1055 1055 1055 1055 1055 1055	2.31 14) 2.00 Co. 20 Co
200 200 200 200 200 200 200 200 200 200	300 1051 1052 1053 1055 1055 1055 1056 1057 1057 1057 1057 1057 1057 1057 1057	2.3.14.9.2 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.5% 3.2.4% 3.2.5% 3.2.4% 3.2.5% 3.2.4% 3.2.5% 3.2.4% 3.2.5% 3.2.4% 3.2.5% 3.2.4% 3.2.5% 3.2.4% 3.2.5% 3.2.4
200 200 200 200 200 200 200 200 200 200	300 1051 1052 1053 1053 1055 1055 1055 1055 1055 1055	2.31 kg / 2.50 k
200 200 200 200 200 300 300 300 300 300	300 1053 1053 1053 1053 1053 1053 1053 1	2.31 kg / 2.50 k
200 200 200 200 200 300 300 300 400 400 200 600 600 600 600 600 600 600 600 6	300 105 105 105 105 105 105 105 105 105 1	2.31.49.40 3.20.59.60 6.61.19.10 6.61.19.10 6.60.19.10 6.60.19.10 6.60.10 7.10.60 6.60.70 6.70 6
200 200 200 200 200 200 200 200 200 200	300 1051 1055 1155 1155 1268 3784 4415 4462 461 1510 527 Power (PowerTap) 0 364 265 275 286 275 287 287 287 287 287 287 287 288 3016 168 184 268 305 31314 3143 486 305 3134 348 368 305 3134 348 368 305 3134 348 368 305	23.1 % 1.0 %
200 200 200 200 200 200 200 200 200 200	300 1033 1033 1033 1033 1033 1033 1033	23.1 % 1.0 %
200 200 200 200 200 200 200 200 200 200	300 1053 1053 1053 1053 1053 1053 1053 1	2.3 1.9 1.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2
200 200 200 200 200 200 200 200 200 200	300 1053 1053 1053 1053 1053 1053 1053 1	2.3 1.9 1.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2
200 200 200 200 200 200 200 200 200 200	300 1015 1015 1015 1015 1015 1015 1015 1	2.3 1,91 (2.5 cm) 2.5 cm (2.5
200 200 200 200 200 300 300 400 400 200 200 200 200 200 200 200 2	300 105 105 105 105 105 105 105 105 105 1	2.3 1,91 (2.5 cm) 2.5 cm (2.5
200 200 200 200 200 200 200 200 200 200	300 1031 1031 1031 1031 1031 1031 1031	2.3 1, 19, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20
200 200 200 200 200 200 200 200 200 200	300 1001 1001 1001 1001 1001 1001 1001	2.3.14/10 (2016) 12-20 (2016) 1
200 200 200 200 200 200 200 200 200 200	300 105 105 105 105 105 105 105 105 105 1	2.3 1, 19, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20











Notes: The curves should generally be concave downward. Variation from this is no doubt due to errors in my measurement equipment.

Efficiency was measured by comparing energy drawn from the battery according to a Cycle Analyst and comparing that to energy sent to the rear wheel of the bicycle as read from a PowerTap hu
Notor power passes through a 9.33:1 planetary generous and a standard bicycle chain and 14t - 52t sprocket on a left crank.